

**David Weaver Commentary in Bold Blue.**

- 1) “Snapshot” and archive all layers (of interest to the State Archivist) that are updated once every 12 months, or less frequently. Might be possible to write scripts to “ping” or automatically copy the layer, and place it in an archival storage location based upon either the update frequency in the metadata, or creation date (when data was added to MeGIS’ catalog)

**There are 3 different types of georeferenced data sets. The GeoArchives must efficiently and consciously accommodate all of these types of updated data sets in the best possible manner:**

- **Raster data, generally imagery, where there is essentially one continuous data set for the state or subunit of the state. An imagery data set should be archived whenever a successor data set is loaded into the GeoLibrary and the old one is no longer the data of choice for general GIS use. These data are not feature-based nor is it updated incrementally.**
- **Vector data (point;line;polygon;route, etc.) where the GIS data is continually updated at the feature level (e.g. E911). This type of data needs metadata at the feature level to capture information on when and how and when individual feature data was collected.**
- **Vector data (point;line;polygon;route) where the data is updated for the whole data set at discrete, periodic intervals (e.g. possibly public wells).**

**NOTE: Vector data is further complicated by the fact that some data sets updated periodically have attributes that are updated much more frequently (e.g. temporal measurements of water levels or radon levels in wells).**

**As noted below by OGIS staff, Arc SDE is a good step in the right direction for feature-based metadata, but it does not capture attribute edits and changes transactionally.**

Pros:

- a. Simple- Requires no extra software or programs, little staff work/time
- b. Shows database at a given time
- c. Can specify which data to export
- d. Good solution for image data
- e. Viable for data that sees little change over time
- f. Easier (than monthly or more frequently) to reassemble data to display on Internet and/or make available for download
- g. Standard approach for all layers

Cons:

- a. Inefficient storage- requires copying entire dataset each time
  - **Not a significant problem with the cost of disk storage going ever lower. Copying entire data sets would be much less costly than evaluating and ‘editing’ (deleting) selected data at the feature level.**
- b. Possible but not practical to query differences between snapshots **(Does this mean just archiving the differences between data sets.)**

- c. Difficult to show lineage of features
- d. As technology evolves, need to migrate snapshots to that technology (**big issue discussed elsewhere**)

**If the GeoLibrary and GeoArchives were working in tandem through an SLA, there could be a policy that when a data layer is updated or undergoes a complete revision or replacement, the ‘outdated’ layer is transferred to the custody of the Archives. This transfer could be a part of the loading protocol of the new data layer.**

**The Data listing interface(s) of the GeoLibrary would list the archived data sets. Some more casual users of the GeoLibrary may not see this historic information at all because it would just be clutter for someone looking for current data.**

2) Utilize SDE 9.1 archiving for frequently updated (E9-1-1 - line), and other test data layers (schools – points, Metwp24 – polygons, and LURC parcels – agency other than MeGIS).

**Yes!**

Pros:

- a. History is maintained by creating a new version
- b. Can search updates between versions
- c. Ability to show change depends on granularity- how frequent are versions made - we can enhance this with date stamps
- d. Industry standard way to archive frequently changing data, which incorporates maintenance and enhancements.

Cons:

- a. Today, although all MeGIS layers are stored in SDE, only three business-valuable Maine State Government layers use versioning functions (i.e. edit in SDE).
- b. Entire database must be archived. (In the current version of SDE (9.0 or older) creating versions eventually create performance problems so this has precluded versioning as a viable option for archiving.) With version 9.1, ESRI is developing a new type of versioning named “archive versioning” that is supposed to provide the ability to use versions for archiving without creating performance problems.
- c. SDE 9.1 may not address GeoArchives needs, and it will not be available to the marketplace until next summer. Therefore we recommend the team explore becoming a beta test site with ESRI

Pros: Our team will be able to ascertain early if 9.1 looks promising as a solution, and will be able to provide input into ESRI’s testing. (Note: MDEP is already a beta tester with ESRI, and is a heavy GIS user. Perhaps they would partner with our project in conducting tests.)

Cons: Time expended if 9.1 fails to provide an archiving solution.

3) Continue developing in-house E9-1-1 retirement layer to 1) pilot the archival process and 2) archive changes in this key layer, regardless of status of SDE 9.1.

Pros:

- a. System developed with public money, (but is based upon proprietary ESRI and Oracle products)
- b. Key learning, which can be published.
- c. We must have a fall-back for this layer, if 9.1 is unsuitable.

Cons:

- a. Time expended if 9.1 succeeds in providing a standardized, industry accepted archiving solution
- b. This method is only being explored with the E911 road layer, which is line feature (not polygon or point). Thus far it is being developed only for the E911 layer, and would require more work to migrate to other layers and agencies.
- c. Custom applications are typically difficult to implement in other environments. They also incur on-going maintenance costs, and often technical enhancements are not applied due to costs. Typically legacy systems limp along until agencies receive appropriations to scrap and totally replace them.

#### 4) Outstanding issues

1. Develop standards/processes for agencies to populate update schedules based upon:

- i.  
Type of feature
- ii.  
Update frequency
- iii.  
Method of data transfer to MeGIS
- iv.  
If data is edited at MeGIS or agency

- **Very good**

2. How to handle layers created by counties/towns/agencies which may be frequently edited (of archival value) that are not on SDE, and annual snapshots are deemed an inadequate solution. MeGIS could potentially offer use of Citrix to log on to Arc GIS software, and develop Internet Mapping Systems to provide access.

- **The GeoLibrary and GeoArchives will need to collaborate to bring these types of data sets and their metadata up to a minimum standard level.**

3. Project Results – is the team looking to provide IMS access to key layers, and down-load access to others as its deliverable? If so, the team will have to designate which layers will have IMS access developed. Download access to annual snapshots may be accomplished via the MeGIS data catalog.

4. Image data will only be backed up on tape and will be static in the database. The imagery is too big to make “snapshots” once a year.

- **Since Imagery does not change once it is created, it only needs to be archived once per layer.**